

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PRD2641-PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2007/052081	International filing date (day/month/year) 06/03/2007	(Earliest) Priority Date (day/month/year) 07/03/2006
Applicant JANSSEN PHARMACEUTICA N.V.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No. III)

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☐ the text is approved as submitted by the applicant
☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. _____
☐ as suggested by the applicant
☐ as selected by this Authority, because the applicant failed to suggest a figure
☐ as selected by this Authority, because this figure better characterizes the invention
b. ☐ none of the figures is to be published with the abstract

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Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The present invention relates to combinations of imazalil, or a salt thereof, and silver compounds which provide an improved biocidal effect. More particularly, the present invention relates to compositions comprising a combination of imazalil, or a salt thereof, together with one or more silver salts selected from silver acetate, silver alginate, silver azide, silver citrate, silver lactate, silver nitrate, silver perchlorate, silver sulfate, silver chloride, silver thiocyanate, silver-sodium-hydrogen-zirconium phosphate, silver sulfadiazine, silver cyclohexanediacetic acid and disilver 2,5-dichloro-3,6-dihydroxy-2,5-cyclohexadiene-1,4-dione; in respective proportions to provide a synergistic biocidal effect. Other suitable silver components (II) are products that set silver free using technologies to make it gradually biologically available such as by ion exchange mechanisms such like using zirconium phosphate based ceramics as a reservoir, or silver provided in glass ceramics as reservoir or carrier, or silver provided with zeolites, silica gel or titanium dioxide as a reservoir or an inorganic derivative containing silver, incorporated into a plastic composition for the preparation of moulded, lacquered or painted products, such as an amino resin (e.g. urea-formaldehyde resin, melamine formaldehyde resin...) or a thermoplastic (e.g. a polyester, polyethylene, polyacrylate, pvc...), or provided as nano-silver particles typically with a particle size of 20-1000 nm. Compositions comprising these combinations are useful for the protection of any living or non-living material, such as crops, plants, fruits, seeds, objects made of wood, thatch or the like, biodegradable material and textiles against deterioration due to the action of microorganisms such as bacteria, fungi, yeasts, algae, and the like.

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A. CLASSIFICATION OF SUBJECT MATTER

INV. A01N43/50 B27K3/52
 ADD. A01N59/16 A01P3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A01N B27K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, BIOSIS, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99/12422 A (JANSSEN PHARMACEUTICA N.V.; BOSSELAERS, JAN, PIETER, HENDRIK; GARNIER,) 18 March 1999 (1999-03-18) cited in the application -----	
X	US 2005/118280 A1 (LEACH ROBERT M ET AL) 2 June 2005 (2005-06-02) claims 1,2; table 1 -----	1-10
X	DATABASE WPI Section Ch, Week 199517 Derwent Publications Ltd., London, GB; Class A60, AN 1995-131302 XP002383453 & WO 95/07913 A1 (MEIJI MILK PROD CO LTD) 23 March 1995 (1995-03-23) abstract -----	1-10

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

12 April 2007

Date of mailing of the international search report

23/04/2007

Name and mailing address of the ISA/

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Authorized officer

Bertrand, Franck

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2007/052081

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9912422	A	18-03-1999	AT 241905 T	15-06-2003
			AU 741544 B2	06-12-2001
			AU 1145599 A	29-03-1999
			BG 64109 B1	30-01-2004
			BG 104203 A	31-08-2001
			BR 9812630 A	22-08-2000
			CA 2302428 A1	18-03-1999
			DE 69815363 D1	10-07-2003
			EE 200000099 A	15-12-2000
			HU 0003478 A2	28-02-2001
			NO 20001170 A	02-05-2000
			NZ 503118 A	25-05-2001
			PL 339175 A1	04-12-2000
			SK 2802000 A3	14-08-2000
			TR 200000623 T2	21-08-2000
			UA 62978 C2	16-10-2000
			US 6174911 B1	16-01-2001
			ZA 9808167 A	22-03-2000
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US 2005118280	A1	02-06-2005	NONE	
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WO 9507913	A1	23-03-1995	NONE	
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2007/052081

International filing date (day/month/year)
06.03.2007

Priority date (day/month/year)
07.03.2006

International Patent Classification (IPC) or both national classification and IPC

INV. A01N43/50 B27K3/52
ADD. A01N59/16 A01P3/00

Applicant
JANSSEN PHARMACEUTICA N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1 (a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Date of completion of
this opinion

see form
PCT/ISA/210

Authorized Officer

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2007/052081

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in electronic form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>1-10</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-10</u>
Industrial applicability (IA)	Yes: Claims	<u>11-0</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item I

Basis of the report

The documents mentioned herein are numbered in accordance with the order they appear in the International Search Report.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The present invention relates to a composition for the preservation of e.g. wood containing a silver salt and imazalil.

None of the cited documents disclose such a composition *per se*. Novelty can thus be acknowledged (Article 33(2) PCT).

D1 discloses a fungicide which can be used for wood based upon imazalil. The activity of imazalil is improved by the presence of epoxyconazole. D2 discloses a wood preservative containing an inorganic and an organic component. The inorganic component can be silver and the organic component can be imazalil. D3 discloses a combination of imazalil and silver as fungicide, but silver is bound to imazalil rather than present in the form of salt independently of imazalil.

D2 is the closest prior art. The difference between D2 and the present invention is that a selection has to be made within 2 lists with respect to D2, namely within the inorganic and within the organic components to reach the present invention. Such a double selection is basically not obvious, provided it is associated with a surprising effect and the technical problem is solved over the whole claimed scope. In the present case, 2 out of 3 series of tests show a synergy between imazalil and silver nitrate, but not the test on *Pseudomonas aeruginosa*. An overall fungicidal effect is expected when mixing fungicides amongst themselves. In the present case, it seems that essential technical features are missing in the independent claims 1, 9 and 10. When a synergy is obtained, it can be considered as non obvious. This synergy is mentioned in the said claims, but only with respect to the proportions needed, which are not explicitly mentioned either. In any case, an evidence is on file that

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

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synergy is not achieved over the whole claimed scope. Therefore, the present application does not fulfill the criteria of Article 33(3) PCT.

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